

That which is claimed is:

1. A soft handover method useful in CDMA mobile communication systems,
comprising:

- (a) detecting error frame indication within a channel decoding unit of a mobile unit,
- 5 (b) determining if a new base station member is in a pilot candidate list when there are detected continuous plural error frame indication;
- (c) if a new base station is found in accordance with step (b), sending a pilot strength measure message direct and activating a soft handover process; or
- (d) if a new base station is not found in accordance with step (b), determining
- 10 whether there is at least one neighbor base station within a pilot neighbor list with a pilot signal strength near a threshold T-ADD value for launching a soft handover process as provided by a network layer; and
- (e) if at least one neighbor base station is found in accordance with step (d), sending a pilot strength measure message from the mobile station to the base station so as to
- 15 activate a soft handover process upon receipt of the pilot strength message.

2. The method according to claim 1, further comprising:

- (f) after the base station launches and activates the soft handover process, sending a handover indication message from the base station to the mobile station;
- (g) after the mobile station has received the handover indication message, removing
- 20 the pilot of the new base station from the pilot neighbor list to a pilot active list; and
- (h) sending a handover completed message to the base station.

3. The method according to claim 2, further comprising:

- (i) determining whether the pilot signal strength of the new base station is greater than the threshold value T-ADD by the mobile station;
- 25 (j) if the pilot signal strength of step (i) is greater than T-ADD, then sending a pilot strength measure message to the base station; and
- (k) after the base station has received the pilot strength measure message, sending a handover indication message from the base station to the mobile station without further response from the mobile station.

4. The method according to claim 3, further comprising:

(l) measuring by the mobile station whether the pilot signal strength of the original base station drops to lower than a value T-DROP;

(m) if it is, launching a pilot active list handover clearance timer and sending a pilot strength measure message to the base station after completion of a set time;

(n) when the base station has received the message, sending a handover indication message from the base station to the mobile station;

(o) removing the pilot channel from the pilot active list to the pilot candidate list and sending a handover completed message by the mobile station;

10 wherein the value T-DROP is a threshold value for terminating soft handover and launching handover clearance timer and is provided by a network layer.

5. The method according to claim 1, wherein said measured pilot signal strength of the base station in the pilot neighbor list is determined by selecting the most powerful one of multipath signals coming from different base stations.